

**In the claims:**

Claims 1-47 (cancelled)

48. (Currently Amended) A ~~bioactivity or biomolecule~~ protein having an activity of interest obtained by a method comprising:

- a) culturing a gene expression library comprising a pool of expression constructs, each expression construct comprising ~~a vector~~ having one cDNA or genomic DNA fragment inserted into a known cloning site, wherein the cDNA or genomic DNA fragments in the pool of expression constructs are derived from a plurality of species of donor organisms, and wherein the cDNA or genomic DNA fragments are each operably-associated with one or more regulatory regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism; and
- b) screening the expression constructs to identify one or more expression construct containing a vector that produces a ~~bioactivity or biomolecule~~ protein activity of interest;
- c) removing the ~~vector~~ cDNA or genomic DNA fragments from ~~the known cloning site~~ of the one or more expression construct identified in b); and
- d) expressing the DNA encoding the ~~bioactivity or biomolecule or protein~~ of interest contained in the ~~vector obtained in c)~~, thereby obtaining the ~~bioactivity or biomolecule protein~~ having an activity of interest.

49. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48, wherein the activity is an enzymatic activity.

50. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 49, wherein the enzymatic activity is ~~selected from the group consisting of~~ oxidoreductase, transferase, hydrolase, lyase, isomerase, and or ligase activity.

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51. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48, wherein the enzymatic activity is ~~selected from~~ a lipase, a protease, a glycosidase, a synthase, ~~and a~~ or kinase activity.
52. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48, wherein the donor organisms are microorganisms.
53. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 52, wherein the microorganisms are derived from an environmental sample.
54. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48, wherein the microorganisms are a mixed population of uncultured organisms.
55. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48, wherein the DNA fragment comprises one or more operons, or portions thereof.
56. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 55, wherein the operon or portions thereof encodes a complete or partial metabolic pathway.
57. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48, wherein the DNA comprises a gene cluster.
58. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 57, wherein the gene cluster encodes one or more polyketide synthases.

59. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48, wherein the method further comprises the step of recovering a fraction of the cDNA or genomic DNA fragments ~~DNA~~ having a desired characteristic.
60. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48 which comprises the step of amplifying the cDNA or genomic DNA fragments.
61. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 60 wherein the step of amplifying the DNA precedes the identifying step.
62. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 61 wherein the identifying step precedes the amplifying step.
63. (Currently Amended) The ~~bioactivity or biomolecule~~ protein of claim 48 which comprises both the steps of (i) amplifying the cDNA or genomic DNA fragments and (ii) recovering a fraction of the cDNA or genomic DNA fragments having a desired characteristic.